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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,605

10/18/2005

Ryuji Suzuka

10992.0946

6011

22852

7590

03/30/2010

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER  
LLP

901 NEW YORK AVENUE, NW  
WASHINGTON, DC 20001-4413

EXAMINER

COLE, ELIZABETH M

ART UNIT

PAPER NUMBER

1782

MAIL DATE

DELIVERY MODE

03/30/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/553,605	<b>Applicant(s)</b> SUZUKA ET AL.	
	<b>Examiner</b> Elizabeth M. Cole	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,7 and 9-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4,5 and 7 is/are allowed.
- 6) ☒ Claim(s) 9-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perkins et al, U.S. Patent No. 5,178,932 in view of McAlister, U.S. Patent No. 3,494,819 and Bessey et al, "Solid Phase Processing of Polymers" and Fourne, "Synthetic Fibers". Perkins discloses a multilayered laminate comprising an inner meltblown layer having a diameter of 0.1-10 micrometers and two outer layer comprising fibers having a diameter in excess of 7 micrometers. The interfaces between the layers significantly intermingled. See abstract. The basis weight for the laminate in the example is 54 grams per square meter which is within the claimed range. The layers are bonded through the application of heat and pressure. Suitable fibers for the layers include polyesters, polyolefins, polyetherester and polyamides. See col. 5, line 65 - col. 6, line 33. The melt blown layer has a basis weight of 14 gsm while the two outer layers have basis weights of 20 gsm each respectively, so the meltblown layer, (i.e., fine fiber layer), has a weight of less than 50% of the fabric weight. Perkins differs from the claimed invention because it does not specifically disclose the claimed bulk density and intrusion index, pressure employed or solution viscosity. However, since Perkins teaches the same types and diameters of fibers in fabrics of the claimed basis weight, and teaches combining the layers through pressure in order to arrive at a laminate where the interfaces are significantly intermingled, it would have been obvious to one of

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ordinary skill in the art to have selected the processing conditions and viscosities through the process of routine experimentation in order to arrive at a fabric having the desired bulk density and intrusion index. With regard to the claimed crystallinity, McAlister teaches that with regard to polyester fibers, it is known that fibers having a higher crystallinity have higher tenacity but poorer bonding properties while fibers having lower crystallinity have lower tenacity but better bonding properties. See col. 2, line 45 - col. 3, line 12. Further, Bessey et al in "Solid Phase Processing of Polymers" teaches that it is known in polyester fibers that the spinning speed is directly related to the degree of crystallinity. See Figure 4.3 on page 93. Bessey et al teaches percent crystallinity which encompasses the claimed range and which can be controlled through control of spinning speed. Therefore, it would have been obvious to have controlled the crystallinity of the polyester fibers of Perkins as taught by McAlister and Bessey in order to arrive at fibers having the desired tenacity and bonding ability. With regard to the solution viscosity, Fourné in "Synthetic Fibers" teaches suitable solution viscosities for spinning polyester fibers which encompass those claimed, (see page 75). Therefore, it would have been obvious to have selected known and suitable solution viscosities for spinning the polyester fibers of Perkins.

3. Claims 1-2, 4-5, 7 are allowed. The primary reason for allowance is that none of the cited art teaches the claimed crystallinity range of 17.8-34.3% for the polyester or polyamide fibers. Generally polyester and polyamide fibers have crystallinity of about 40%, (see Fiber Science Handbook, page 60, cited 1/28/09) and there is nothing in the art of record that discloses or renders obvious the claimed range.

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4. Applicant's arguments filed 1/4/10 have been fully considered. Applicant's arguments regarding the prior art rejection with regard to the product claims is persuasive for the reasons set forth above.

5. With regard to the process claims, Applicant's arguments are not persuasive because the prior art of record teaches the claimed solution viscosities and that typical crystallinity for polyester and nylon fibers is about 40 percent and that the crystallinity can be varied to arrive at optimum tenacity and bonding abilities. While the cited art would not lead one of ordinary skill in the art to the range claimed in the product claims, the process claims include crystallinity values of about 40 percent which is taught in the prior art as a typical value. Further, with regard to the solution viscosity, the prior art teaches the general values.

6. With regard to the intrusion index, since Perkins teaches a well entangled fabric comprising the fibers made from the claimed materials and having the claimed size, it would have been obvious to have optimized bonding conditions in order to arrive at a fabric having the desired degree of entanglement. While Perkins does not define the entanglement in the identical terms of the intrusion index, Perkins does clearly teach the claimed method of forming a well entangled fabric. Therefore, the rejection is maintained.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

The examiner's supervisor Rena Dye may be reached at (571) 272-3186.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax number for all official faxes is (571) 273-8300.

/Elizabeth M. Cole/  
Primary Examiner, Art Unit 1794

e.m.c